

REMARKS

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing Amendment, claims 1-13 and 15-29 are pending in the Application, with claim 24 withdrawn from consideration by the Examiner as being drawn to a non-elected invention and claim 14 having been cancelled following incorporation of its subject matter into claim 3. The Amendment accompanying this response is believed to introduce no new matter and its entry is respectfully requested. Based on the above Amendment and the following remarks, applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn and the claims allowed. Support for the Amendment to the Title is found in paragraph [0001]. Support for the Amendment to paragraph [0057] of the published Application is found in paragraph [0049] of the Application as filed. Support for the Amendment to paragraph [0105] is found in the correspondence of paragraph [0105] and SEQ ID NOs: 17-25. Support for the Amendment to the Abstract is found in paragraphs [0061] and [0087]. Support for the Amendment to Figure 10 is found in the correspondence between Figure 10 and SEQ ID NO: 16 as filed.

Support for the Amendment to claim 2 is found in paragraph [0066]. Support for the Amendment to claims 3 and 4 is found in paragraphs [0066] and [0060]. Support for the Amendment to claim 6 is found in paragraph [0001]. Support for the Amendment to claim 7 is found in paragraphs [0001] and [0006]. Support for the Amendment to claim 8 is found in paragraphs [0010] and [0011]. Support for the Amendment to claims 9 and 10 is found in paragraph [0061]. Support for the Amendment to claim 12 is found in paragraph [0015]. Support for the Amendment to claim 13 is found in paragraph [0016]. Support for the

Amendment to claim 15 is found in paragraph [0018]. Support for the amendment to claim 25 is found in claim 25 as filed. Support for new claims 26-29 is found in paragraph [0061]. Support for all amendments may further be found throughout the specification.

Please cancel claim 14 without prejudice to or disclaimer of the subject matter therein.

Priority

Applicants respectfully disagree with the Examiner's suggestion that Applicants' request for benefit of priority for the instant Application based on U.S. Provisional Application No. 60/267,183 (the '183 Application) is supported only for claim 25 of the elected claims. The Examiner's attention is respectfully directed to the support for claim 2 of the instant Application (as amended herein) on page 10, paragraph [0038] of the '183 Application; support for claim 9 of the instant Application (as amended herein) on page 22, paragraph [0076] of the '183 Application; and support for claim 13 of the instant Application on page 12, paragraph [0046] of the '183 Application. The Examiner's recognition of the priority benefit of claim 25 is acknowledged with gratitude.

Compliance with Sequence Rules

The Office Action states that the Application fails to fully comply with the requirements of 37 C.F.R. § 1.821(a)(1) and (a)(2), because sequences in Figure 10 and in paragraph [0105] are disclosed without benefit of SEQ ID NOs. Applicants have amended Figure 10 and paragraph [0105] to include corresponding SEQ ID NOs. No new matter has been added by these amendments, and the sequence identification requirements have been satisfied.

Objections to the Specification

Objection 6

The Office Action states that the title is not descriptive. Although Applicants respectfully maintain that "Polynucleotide Constructs for Increased Lysine Production" is adequately descriptive, to hasten prosecution Applicants have herein amended the title of the Application to that suggested by the Examiner, "Polynucleotide Constructs Encoding Aspartate Kinase, Aspartate-Semialdehyde Dehydrogenase, and Dihydrodipicolinate Reductase and Related Constructs, Products, and Methods."

Objection 7

The Office Action states that the Abstract of the Disclosure is objected to for not completely describing the disclosed subject matter. The Office Action further suggests that the Abstract be amended to include particular species of embodiments of the invention, including use of genes from *C. glutamicum* and envisioned production of lysine in *C. glutamicum*.

Applicants have amended the Abstract herein. The Abstract as amended describes exemplary embodiments as suggested by the Examiner.

Objection 8

The Office Action states that the sequence listing contains 25 sequences as originally filed, but that SEQ ID NOs: 16-25 are not described in the specification. Applicants submit that SEQ ID NOs: 16-25 are described in the specification as set forth in the amendments to Figure 10 and paragraph [0105] as set forth herein.

Objection 9

The Office Action notes that the word "*lactofermentum*" is incorrectly spelled "*lactovermentum*" in claims 7-11. The spelling is a typographical error unrelated to patentability. Amendments to the claims have rendered this objection moot.

Applicants respectfully submit that they have addressed all of the Examiner's stated objections, and Applicants request that the objections be withdrawn and the claims allowed.

Rejections under 35 U.S.C. § 112, Second Paragraph

Rejection 10

The Examiner has rejected claims 1-23 and 25 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Specifically, the Office Action states that the abbreviations dapB, lysA, dapA, dapD, dapE, and dapF are unclear regarding the limitations that they impose.

Applicants have amended herein the claims containing references to dapB, lysA, dapA, dapD, dapE, and dapF, to include complete enzyme names that define enzymes by function. Applicants argue that the rejection of these claims is moot and should be withdrawn.

Rejection 11

The Examiner has rejected claims 2-6, 9-11, and 13-15 as allegedly indefinite. The Office Action states that the term "truncated" is not limited in the claims as it is in the specification. Applicants have amended claims 2-4 of the application, rendering this rejection moot. Withdrawal of the rejection and allowance of the claims is requested.

Rejection 12

The Examiner has rejected claims 4-6, 10, 11, 14, and 15 as allegedly indefinite. The Office Action states that the term "ORF2" polypeptide is unclear. Applicants submit that the term "ORF" is generally known to mean "Open Reading Frame." Applicants further submit that "ORF2" is adequately defined in the amended claims, and they request that the rejection be withdrawn and the claims allowed.

Rejection 13

The Examiner has rejected claims 7 and 9-11 as allegedly indefinite. Specifically, the Office Action states that the claims at issue refer to polypeptides encoded by bacteria, while polypeptides are more appropriately referred to as being encoded by genes. Applicants have amended claims 7 and 9-11 to clarify that the polypeptides are encoded by genes. Applicants therefore respectfully request that this rejection be withdrawn.

Rejection 14

The Examiner has rejected claim 8 for alleged indefiniteness. The Office Action states that the phrase "wherein said ask and asd polypeptides are encoded by the ask-asd operon of ATCC21529" is unclear. The claim has been amended, and Applicants respectfully request that the rejection be withdrawn.

Rejection 15

The Examiner has rejected claim 7 and claims 9-11 under 35 U.S. § 112, second paragraph, for alleged indefiniteness. The Office Action states that the group including "*Corynebacterium*, *Brevibacterium flavum*, and *Brevibacterium lactofermentum*" is confusing because *Corynebacterium* is a genus that includes *Brevibacterium flavum* and *Brevibacterium lactofermentum*, thereby rendering the members of the group nondistinct and confusing. Applicants submit that the amendment submitted herewith has rendered this rejection moot, and they respectfully request that the rejection be withdrawn and the claims allowed.

Rejection 16

The Examiner has rejected claim 20 for indefiniteness. The Office Action states that the inclusion of both *Brevibacterium lactofermentum* and *Corynebacterium glutamicum* in the group of the claim is confusing because these are allegedly different names for the same organism. In support of this proposition the Examiner has cited the online Taxonomy Browser of the National

Center for Biotechnology Information, available at:

www.ncbi.nlm.nih.gov/Taxonomy/taxonomyhome.html/. The Taxonomy Browser lists

Brevibacterium lactofermentum as a synonym for *Corynebacterium glutamicum*.

Although the art may indicate that *Brevibacterium lactofermentum* and *Corynebacterium glutamicum* are members of the same species (and Applicants make no admission that they are), it has been demonstrated that they are distinct. For example, Liebl, *et al.*, (1981) *Int. J. Syst. Bacteriol.* 31:131-138 (attached, cited by the Taxonomy Browser, and incorporated in the Application at paragraph [0088]) supports the proposition that the named microorganisms are distinct strains, as demonstrated by restriction mapping of RNA. Applicants submit that as different strains the members of the group set forth in claim 20 are patentably distinct and request that the rejection be withdrawn and the claim allowed.

Rejection 17

The Examiner has rejected claim 25 as allegedly indefinite. The Office Action states that the term "succinylaminoketopimelate transaminase (dapC)" is not clear, because the term "dapC" may be attributed to the enzyme succinyldiaminopimelate transaminase. Claim 25 has been amended, such that the enzyme is functionally defined and the term "dapC" no longer appears. Applicants therefore contend that the rejection should be withdrawn.

Rejections under 35 U.S.C. § 112, First Paragraph

Rejection 18

The Examiner has rejected claims 4-6, 10, 11, 14, and 15 under 35 U.S.C. § 112, first paragraph, for alleged failure to comply with the written description requirement. Applicants respectfully submit that the amendment of claim 4 has adequately addressed this rejection of claims 4-6, 10, 11, 14, and 15 because the amendment is adequately supported by the written

description, given the limitation of claimed complete ORF2 to a nucleotide sequence at least 95% identical to SEQ ID NO: 9.

Rejection 19

The Examiner has rejected claims 8 and 12-15 under 35 U.S.C. § 112, first paragraph, for alleged failure to comply with the written description requirement. Claims 8 and 12-15 have been amended to refer to SEQ ID NOs, rendering this rejection moot. Applicants request that the rejections be withdrawn and the claims allowed.

Rejections under 35 U.S.C. § 102

Rejection 20

The Examiner has rejected claims 1-23 under 35 U.S.C. § 102(e) as allegedly anticipated by Li *et al.*, WO 01/49854 ("the '854 Application"), which has an international filing date of December 29, 2000, and was published on July 12, 2001. The '854 Application is not a reference under § 102(e), which provides that an international application shall have effect under § 102(e) "only if the international application designated the United States. . . ." The '854 Application does not designate the United States.

Rejection 21

The Examiner has provisionally rejected claims 1-4, 7-18, and 20-21 under 35 U.S.C. § 102(e) as allegedly anticipated by Hanke *et al.*, U.S. Application No. 09/722,441 ("the '441 Application"). Lhing-Yew Li, an inventor in the instant application, is also an inventor in the '441 Application.

Section 102(e) requires that the reference, to be effective as prior art, must be by "another." Attached as Appendix A is a Declaration of Lhing-Yew Li pursuant to 37 CFR 1.132, unequivocally showing that the information relied on in the '441 Application for the rejection of

claims in the instant Application was an invention of Lhing-Yew Li. The '441 Application is therefore unavailable as a reference under 35 U.S.C. § 102(e). The rejection of claims 1-4, 7-18, and 20-21 should be withdrawn and the claims allowed.

Double Patenting

22. The Examiner has provisionally rejected claims 1-4, 7-18, and 20-21 under the judicially created doctrine of double patenting over claims 21 and 24-28 of copending Application No. 09/722,441. The Office Action states that the subject matter of these claims of the instant Application is fully disclosed in the '441 Application and would be covered by any patent granted on the '441 Application.

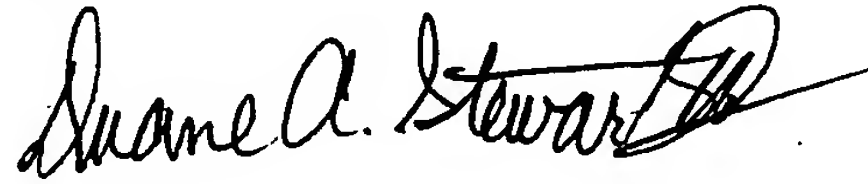
Filed herewith is a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c), which is sufficient to overcome the provisional rejection based on nonstatutory (judicially created) double patenting. Withdrawal of the rejection and allowance of the claims is respectfully requested.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and as such, the present Application is in condition for allowance. If the Examiner believes for any reason that personal communication will expedite prosecution of this Application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested. If any net fees for addition of claims or fees for additional extension of time are necessary and not otherwise provided for in this communication, please charge them to Deposit Account No. 02-4553.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Duane A. Stewart III", with a stylized flourish at the end.

Dated: June 9, 2004

Duane A. Stewart III
Registration No. 54,468
BUCHANAN INGERSOLL PC
One Oxford Centre
301 Grant Street
Pittsburgh, Pennsylvania 15219
ph: (412) 562-1622
fx: (412) 562-1041



| | | | |
|--------------|---|---|-----|
| ATCC 13032 | 1 | | 50 |
| N13 | | V | |
| ATCC 21529 | | C | |
| Consensus | | C | |
| SEQ ID NO:16 | MALVVQKYGG SSLESAERIR NVAERIVATK KAGNDVVVC SAMGDTTDEL | | |
| ATCC 13032 | 51 | | 100 |
| N13 | | | |
| ATCC 21529 | | | |
| Consensus | LELAAAVNPV PPAREMDMLL TAGERISNAL VAMAIESLGA EAQSFTGSQA | | |
| ATCC 13032 | 101 | | 150 |
| N13 | | | |
| ATCC 21529 | | | |
| Consensus | GVLTTERRHGN ARIVDVTGPR VREALDEGKI CIVAGFQGVN KETRDVTTLG | | |
| ATCC 13032 | 151 | | 200 |
| N13 | | | |
| ATCC 21529 | | | |
| Consensus | RGGSDTTAVA LAAALNADVC EIYSDVDGVY TADPRIVPNA QKLEKLSFEE | | |
| ATCC 13032 | 201 | | 250 |
| N13 | | | |
| ATCC 21529 | | | |
| Consensus | MLELAAVGSK ILVLRVVEYA RAFNVPLRVR SSYSNDPGTL IAGSMEDIPV | | |
| ATCC 13032 | 251 | | 300 |
| N13 | | | |
| ATCC 21529 | | | |
| Consensus | EEAVLTGVAT DKSEAKVTYL GISDKPGEEA KVFRALADAE INIDMVLQNV | | |
| ATCC 13032 | 301 | | 350 |
| N13 | | S | G |
| ATCC 21529 | | A | D |
| Consensus | SSVEDGTTDI TFTCPRADGR RAMEILKKLQ VQGNWTNLVY DDQVGKVSIV | A | G |
| ATCC 13032 | 351 | | 400 |
| N13 | | T | |
| ATCC 21529 | | T | |
| Consensus | GAGMKSHPGV TAEFMEALRD VNVNIELIST SEIRISVLIR EDDLDAARA | I | |
| ATCC 13032 | 401 | | 421 |
| N13 | | | |
| ATCC 21529 | | | |
| Consensus | LHEQFQLGGE DEAVVYAGTG R | | |

FIG.10